

CS375 Small Assignment 3

Due Sep 26th 10PM ET

Consider the following pseudo code for selection sort:

```
SelectionSort(A[0, ..., n-1]):  
  for i in range(n):  
    mIndex = i  
    for j in range(i + 1, n):  
      if A[j] < A[mIndex]:  
        mIndex = j  
    swap A[i] and A[mIndex]
```

1. What is the worst case runtime of the above function? (I am looking for a Θ bound here, so this is really two questions in one)
2. What is the best case runtime of the above function? (I am looking for a Θ bound here, so this is really two questions in one)
3. Using the loop invariant method we've discussed in class, show that the above algorithm correctly sorts A.